

Amendments to the Claims

Please amend the claims as follows:

Claims 1-18 (canceled).

19. (previously presented) A method for performing a step of a chemical reaction on the surface of a support, said method comprising:

- (a) placing a support into a chamber of a device, said device comprising:
  - (i) a housing comprising a housing chamber,
  - (ii) an opening in said housing adapted for insertion of a support into said housing chamber,
  - (iii) a sealing member movably mounted in said housing chamber and adapted to engage said support to form a reagent chamber between a surface of said support and a surface of said sealing member, wherein said sealing member is attached to a mechanism for moving said sealing member within said housing chamber,
  - (iv) a mechanism adapted to engage said support on a surface opposite said surface engaged by said sealing member,
  - (v) an inlet in fluid communication with said reagent chamber, and
  - (vi) optionally, an outlet in fluid communication with said reagent chamber,
- (b) activating said mechanism of (iv) to urge said support toward said sealing member,
- (c) activating said mechanism of (iii) to urge said support against said mechanism of (iv) and against an interior wall of said housing chamber and to thereby form said reagent chamber,
- (d) introducing a fluid reagent for conducting said reaction step into said reagent chamber by means of said inlet,
- (e) removing said fluid reagent from said reagent chamber by means of said inlet or optionally by means of said outlet,
- (f) deactivating said mechanism of (iii), and
- (g) removing said support from said housing chamber.

20. (original) A method according to Claim 19 wherein said chemical reaction is selected from the group consisting of washing said surface, oxidizing a substance attached to

said surface, removing a protecting group from a substance on said surface, blocking and deblocking sites on said surface and reducing a substance attached to said surface.

21. (previously presented) A method according to Claim 19 wherein said device comprises a viewing area in a wall of said housing adapted to view a surface of said support and said method further comprises viewing said surface of said support to determine the status of said step of said chemical reaction.

22. (original) A method according to Claim 21 wherein said mechanism of (iv) comprises two to four pressure-activated cylinders, each of which is disposed in a port in said window.

23. (previously presented) A method according to Claim 19 wherein said support is on a holding element that is a vacuum actuated element and said method further comprises actuating said element to thereby secure said support to said element.

24. (previously presented) A method according to Claim 19 wherein said mechanism of (iii) is a pressure-activated mechanism that is a cylinder within a guide.

25. (original) A method according to Claim 19 wherein said device is rotatably mounted on a frame and said method comprises rotating said device 45 degrees after introduction of said fluid reagent in step (d).

26. (previously presented) A method for performing a step of a chemical reaction on the surface of a support, said method comprising:

- (a) placing a support into a chamber of a device,
- (b) activating a mechanism adapted to engage said support on a surface thereof,
- (c) activating a mechanism for moving a sealing member within said chamber to engage a surface of said support opposite said surface engaged by said mechanism of step (b) and deactivating said mechanism of step (b) to thereby form a reagent chamber,
- (d) introducing a fluid reagent for conducting said reaction step into said reagent chamber,
- (e) removing said fluid reagent from said reagent chamber,

- (f) deactivating said mechanism for moving a sealing member within said chamber, and
- (g) removing said support from said chamber.

27. (original) A method according to Claim 26 wherein said chemical reaction is selected from the group consisting of washing said surface, oxidizing a substance attached to said surface, removing a protecting group from a substance on said surface, blocking and deblocking sites on said surface and reducing a substance attached to said surface.

28. (original) A method according to Claim 26 wherein said device is rotatably mounted on a frame and said method comprises rotating said device about 20 to about 45 degrees after introduction of said fluid reagent in step (d).

29. (previously presented) A method for synthesizing a plurality of biopolymers on the surface of a support wherein said synthesis comprises a plurality of monomer additions, said method comprising after each of said monomer additions:

- (a) placing said support into a chamber of a first device and subjecting said surface to a first step of said synthesis that is subsequent to a monomer addition and

- (b) placing said support into a chamber of a second device and subjecting said surface to a second step of said synthesis that is subsequent to said first step wherein said first device and said second device are devices comprising:

- (a) a housing comprising a housing chamber,
- (b) an opening in said housing adapted for insertion of a support into said housing chamber,
- (c) a sealing member movably mounted in said housing chamber and adapted to engage said support to form a reagent chamber between a surface of said support and a surface of said sealing member,
- (d) a mechanism for moving said sealing member within said housing chamber,
- (e) a mechanism adapted to engage and hold said support, during said insertion, on a surface opposite said surface engaged by said sealing member and, in cooperation with said mechanism of step (d), to move said support engaged by said sealing member within said housing chamber,
- (f) an inlet in fluid communication with said reagent chamber and
- (g) optionally, an outlet in fluid communication with said reagent chamber.

30. (original) A method according to Claim 29 wherein each of said first step and said second step comprises a wash.

31. (original) A method according to Claim 29 wherein said biopolymers are polynucleotides.

32. (original) A method according to Claim 31 wherein said first step comprises subjecting said surface to an oxidizing agent.

33. (original) A method according to Claim 31 wherein said second step comprises subjecting said surface to an agent for removing a protecting group.

34. (original) A method according to Claim 29 wherein a wash solution and a reagent for said synthesis are independently directed to said inlet of said device.

35. (original) A method according to Claim 34 wherein said wash solution is an organic solvent.

36. (original) A method according to Claim 35 wherein said biopolymers are synthesized on said surface in an array.

37. (original) A method according to Claim 36 wherein said biopolymers are synthesized on said surface in multiple arrays and said support is subsequently diced into individual arrays of biopolymers on a support.

38. (previously presented) An apparatus for synthesizing an array of biopolymers on the surface of a support, said apparatus comprising:

(a) a plurality of devices rotatably mounted on said apparatus wherein said devices comprise:

- (i) a housing comprising a housing chamber,
- (ii) an opening in said housing adapted for insertion of a support into said housing chamber,

(iii) a sealing member movably mounted in said housing chamber and adapted to engage said support to form a reagent chamber between a surface of said support and a surface of said sealing member,

(iv) a mechanism for moving said sealing member within said housing chamber,

(v) a mechanism adapted to engage and hold said support, during said insertion, on a surface opposite said surface engaged by said sealing member and, in cooperation with said mechanism of step (d), to move said support engaged by said sealing member within said housing chamber,

(vi) an inlet in fluid communication with said reagent chamber and

(vii) optionally, an outlet in fluid communication with said reagent chamber,

(b) one or more fluid dispensing stations in fluid communication with one or more of said devices,

(c) a station for monomer addition to said surface of said support,

(d) a mechanism for moving a support to and from said station for monomer addition and one of said devices and from one of said devices to another of said devices, and

(e) a mechanism for rotating said devices.

39. (original) An apparatus according to Claim 38 further comprising a controller for controlling the movement of said mechanism for moving said support.

40. (original) An apparatus according to Claim 38 wherein said mechanism is a robotic arm.

41. (original) An apparatus according to Claim 38 wherein said apparatus further comprises a manifold in fluid communication with an inlet of one of said devices.

Claim 42 (canceled).

43. (original) A method for performing a step of a chemical reaction on the surface of a support, said method comprising:

(a) forming a reaction chamber *in situ*, said reaction chamber comprising said surface of said support and a sealing member,

- (b) introducing a fluid reagent for conducting said reaction step into said reagent chamber,
- (c) removing said fluid reagent from said reagent chamber, and
- (d) removing said support from contact with said sealing member to thereby un-form said reaction chamber.

Claims 44-48. (canceled).

49. (previously presented) A method for synthesizing an array of biopolymers on a surface of a support, said method comprising:

- (a) adding one or more polymer subunits at each of multiple feature locations during each of multiple rounds of subunit additions and
- (b) between rounds of subunit additions:
  - (i) forming a reaction chamber comprising said surface of said support and a member which seals against said surface,
  - (ii) introducing a fluid reagent for conducting said reaction step into said reagent chamber, and
  - (iii) removing said fluid reagent from said reagent chamber.

50. (currently amended) A method according to claim 49 ~~48~~ additionally comprising removing said support from contact with said sealing member to thereby un-form said reaction chamber.